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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,106	12/09/2003	Naomasa Suzuki	1743/229	2655
7590	12/29/2004		EXAMINER HASHMI, ZIA R	
Edward W. Greason Kenyon & Kenyon One Broadway New York, NY 10004			ART UNIT 2881	PAPER NUMBER

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/730,106	Applicant(s) SUZUKI ET AL.	
	Examiner Zia R. Hashmi	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. An "Amendment" was received on December 2, 2004 along with "Remarks" in response to Office Action of June 2, 2004. Previous Office Action is withdrawn. New Office Action follows:

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Independent claims 1 and dependent claims 2, 4 and 6 are rejected under U.S.C. 102(b) as being anticipated by Otaka et al. ( 5,412,209 ).

4. With respect to independent claims 1, 3 and 5, Otaka discloses a scanning electron microscope ( col. 1, lines 1-2 ) comprising:

an electron source ( col. 9, lines 37-38 & 31 and 101 & 121 in Fig. 5 ) for generating electron beam ( col. 9, line 31 and 121 in Fig. 5 );

a magnetic field type object lens for focusing the electron beam ( col. 9, lines 45-46 and 109 in Fig. 5 ); a detector arranged on an electron source side of focused magnetic field of the object lens ( col. 9, lines 46-47 and 106 in Fig. 5 );

a negative voltage applying power source applying a negative voltage to a sample

( col. 3, lines 15-22, col. 8, lines 33-35 and 10 & 11 in Fig. 1 ), the object lens being formed for leaking a magnetic field toward a sample side ( col.3, lines 4-11 and col. 6, lines 19-28 ), the detector emitting secondary electron ( col. 2, lines 58-59 and col. 12, lines 15-22 ) by collision of a reflected electron ( col. 8, line 36 ) being arranged in a direction toward which the reflected electron emitted from the sample in a direction other than an opening of the object lens for passing the electron beam is deflected by an electric field formed between the sample and the object lens and the leaking magnetic field ( col. 2, lines 54-62, col. 3, lines 4-11 and col. 8, lines 33-41 ).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Independent claims 3 and 5, and dependent claims 2, 4 and 6 are rejected under U.S.C. 103(a) as being unpatentable over Otaka et al. ( 5,412,209), in view of Todokoro et al. ( 6,084,238 ).

7. With respect to claims 2-6, Otaka et al. fail to disclose an accelerating tube arranged between a sample and a detector, or a tilted portion of a sample. Todokoro et al., however, disclose an accelerating tube arranged between a sample and a detector with a voltage applied to the sample ( Abstract, lines 3-6, col. 2, lines 44-45, col. 3, lines 35-39, col. 5, lines 1-2, and 13 in Fig. 1 ). They also disclose a tilted portion of the sample toward a center of the object lens by forming focused magnetic field in a

region which includes the sample ( col. 14, lines 6-18, col. 2, lines 23-26 & 50-54, col. 18, claim 10, and Fig. 12 ).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the method and apparatus of Otaka and Todokoro et al., and add features like plurality of detectors arranged at positions in axial symmetry with respect to the optical axis of the electron beam, or adjusting the shades of images by adjusting an electric field, because Otaka et al. teach ( col. 1, lines 6-11 ) that a scanning electron microscope (SEM) is suitable for performing observation or length measurements of a contact hole or a line pattern by irradiating an electron beam on a specimen, such as a semiconductor device, in order to evaluate its production process.

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Todokoro discloses ( 5,939,720 ) an SEM in which two detectors are used to detect secondary electrons.
9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zia Hashmi whose telephone number is (571) 272-2473.

The examiner can normally be reached between 8.30 AM- 5 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477.

Zia Hashmi

December 22, 2004.

  
JOHN R. LEE  
SUPERVISOR/EXAMINER  
TECHNOLOGY CENTER 2800